

Abstract

A process for continuously regenerating catalyst particles comprising: passing deactivated catalyst particles downwards in sequence through the first coke-burning zone, second coke-burning zone, oxychlorination zone, and calcination zone in the regenerator, wherein the catalyst particles are contacted with the regeneration gas from the second coke-burning zone, the supplemented dry air, and an inert gas in the first coke-burning zone; introducing an oxygen-containing regeneration gas from the second coke-burning zone into the regenerator, wherein said gas is contacted with the catalyst particles from the first coke burning zone; withdrawing the regeneration gas from the regenerator through the first coke-burning zone and, after the recovery system, recycling it to the second coke-burning zone. The regeneration gas may pass the catalyst bed in either a centrifugal or centripetal way. This process prevents the regeneration gas with a high water content from contacting the catalyst at a high temperature as in the conventional continuous coke-burning processes for regenerating catalyst particles and thereby reduces the decreasing rate of the specific surface area of the catalyst and prolongs its service life.